

What is claimed is:

1. In a carbon heating apparatus, characterizing by comprising:

a carbon heater processed by cutting a predetermined carbon fiber in a constant form to have a predetermined length and width and performing a heat treatment against the side
5 face cut in hydrogen gas atmosphere of a predetermined temperature to make its all surfaces uniform;

terminal portions connected with the outside power supply lines of a predetermined material to provide electrical connecting paths to both ends of the carbon heater; and,

a quartz glass tube melting-joined in state that the carbon heater is sealed and the
10 terminal portions are located at the both ends of the carbon heater.

2. The carbon heating apparatus according to claim 1, characterized in that: the carbon heater uses mineral carbon materials.

15 3. The carbon heating apparatus according to claim 1, characterized in that: in the inside of the carbon heater sealed into the quartz glass tube is inserted a metal ribbon having a predetermined thickness and width to prevent oxidation of carbon by air penetrated into the quartz glass tube upon producing a leak therein.

20 4. The carbon heating apparatus according to claim 3, characterized in that: the metal ribbon is consisted of molybdenum.

5. The carbon heating apparatus according to claim 3, characterized in that: the metal ribbon has a thickness of 28 to 30 μ m and a width of 3 to 4mm.

6. The carbon heating apparatus according to claim 1, characterized in that: one end of the terminal portion is formed in a circle of a metal thin film surrounding the carbon heater, while other end of the terminal portions is extended from the circle shape of the metal thin film and welded with the outside power supply lines.

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7. A carbon heating apparatus manufacturing method, characterizing by including the steps of:

forming a carbon heater by cutting a predetermined carbon fiber in a constant form to have a predetermined length and width;

10 heat-treating the carbon heater cut in hydrogen gas atmosphere of a predetermined temperature under a high vacuum to make its surface uniform;

after putting the heat-treated carbon heater into a quartz glass tube and injecting the hydrogen gas, baking it at a predetermined temperature to remove impurities;

primary aging the carbon heater baked by applying a primary aging voltage to it;

15 secondary aging the carbon heater by applying a secondary aging voltage to it; and

after confirming the vacuum state, sealing the quartz glass tube by melting and molding it.

8. The carbon heating apparatus manufacturing method according to claim 7,
20 characterized in that: the process for cutting the carbon fiber uses any one of a press cutting, a dedicated jig, or a wire cutting methods.

9. The carbon heating apparatus manufacturing method according to claim 7, characterized in that: the heat-treating step is made for about 2 to 3 minutes in the hydrogen

gas atmosphere of 900 to 1000 °C under a high vacuum of at least 10^{-5} Torr.

10. The carbon heating apparatus manufacturing method according to claim 7,
characterized in that: the baking step is made at the temperature of 1600 to 1700°C to
5 remove impurities.

11. The carbon heating apparatus manufacturing method according to claim 7,
characterized in that: the primary aging voltage uses 60 to 70V

10 12. The carbon heating apparatus manufacturing method according to claim 7,
characterized in that: the secondary voltage uses 100V.

13. The carbon heating apparatus manufacturing method according to claim 7,
characterized in that: it uses a hydrogen burner of a high temperature of 1500 to 1700°C,
15 upon the melting and molding.

14. The carbon heating apparatus manufacturing method according to claim 7,
characterized in that: the heat-treating step heat-treats the cut carbon heater for about 2 hours
under a high temperature of 300°C and slowly cools it for 1 hour to make the section
20 structure of the side face thereof stable.

15. The carbon heating apparatus manufacturing method according to claim 7,
characterized in that: in the sealing step, a mixed gas of methylene 0.25% and bromide 70%
is injected and sealed into the quartz glass tube.